CLAIM AMENDMENTS

Please amend the claims as described below. In accordance with 37 CFR §1.121, a complete listing of all claims in the application is provided below. Notably, the status of each claim is indicated in the parenthetical expression adjacent to the claim number.

Claims 1-24 **(Canceled)**.

1   25. **(Currently Amended)** A magnetic resonance imaging system for imaging an

2   artery of a patient using an administered magnetic resonance contrast agent, the magnetic

3   resonance imaging system comprising:

4   a monitor unit to allow an operator to <u>visually</u> observe a change in the concentration

5   of the contrast agent in a region of interest; and

6   a magnetic resonance imaging unit to collect image data of an imaging sequence to

7   image the artery, wherein the magnetic resonance imaging unit, <u>after the operator</u>

8   <u>observes the change in the concentration of the contrast agent in the region of interest and</u>

9   in response to an input from a̶n̶ <u>the</u> operator, collects image data which is representative of

10   the central portion of k-space near the beginning of the imaging sequence and a portion of

11   the periphery of k-space thereafter and, wherein the operator provides the input to the

12   magnetic resonance imaging unit after observing a change in the concentration of the

13   contrast agent in the region of interest.

1   26. **(Currently Amended)** The system of claim 25 wherein the magnetic

2   resonance imaging unit generates a series of images and wherein the monitor unit receives

Page 3

3   the images and <u>displays</u> ~~depicts~~ the images as a temporal pattern of the concentration of

4   the contrast agent in the region of interest.

1   27.   **(Previously Presented)**   The system of claim 26 wherein the magnetic

2   resonance imaging unit generates a series of magnetic resonance pulses which are

3   applied to the region of interest in the patient.

1   28.   **(Previously Presented)**   The system of claim 27 wherein the magnetic

2   resonance pulses are radio frequency pulses.

1   29.   **(Previously Presented)**   The system of claim 25 wherein the magnetic

2   resonance imaging unit continuously or periodically generates images of the region of

3   interest and wherein the monitoring unit displays the images of the region of interest.

1   30. **(Previously Presented)** The system of claim 25 further including a magnetic

2   resonance injection unit to inject the contrast agent into the patient before or while the

3   magnetic resonance imaging unit continuously or periodically generates images of the

4   region of interest that are displayed by the monitoring unit.

1   31.   **(Currently Amended)**   A method of imaging an artery of a patient using

2   magnetic resonance imaging and an administered magnetic resonance contrast agent, the

3   method comprising:

4   monitoring a region of interest to <u>allow an operator to visually</u> observe the arrival of

5   the contrast agent in a region of interest;

6   collecting image data of a magnetic resonance imaging sequence<u>, after the operator</u>

7   <u>observes the arrival of the contrast agent in the region of interest and in response to an</u>

8   <u>input from the operator,</u> wherein the image data which is representative of the central

9   portion of k-space is collected near the beginning of the imaging sequence and while the

10   concentration of contrast agent in the artery is substantially greater than a concentration of

11   contrast agent in veins adjacent to the artery and wherein the image data which is

12   representative of a peripheral portion of k-space is collected after collecting the central

13   portion of k-space.

1   32.   **(Previously Presented)**   The method of claim 31 wherein the imaging

2   sequence is a 3D imaging sequence.

1   33.   **(Previously Presented)**   The method of claim 31 wherein monitoring the

2   region of interest includes continuously or periodically monitoring the region of interest to

3   detect the arrival of the contrast agent in the region of interest.

1   34.   **(Previously Presented)**   The method of claim 31 further including

2   administering the magnetic resonance contrast agent to the patient as a bolus type

3   injection.

Page 5

1   35. **(Previously Presented)** The method of claim 31 wherein monitoring a region

2   of interest to observe the arrival of the contrast agent in a region of interest includes

3   applying a series of magnetic resonance pulses to a region of interest in the patient.

1   36. **(Previously Presented)** The method of claim 35 wherein the magnetic

2   resonance pulses are radio frequency pulses.

1   37. **(Previously Presented)** The method of claim 31 further including instructing

2   the patient to hold his breath before collecting image data which is representative of the

3   central portion of k-space.

1   38. **(Currently Amended)** The method of claim 31 wherein monitoring the region

2   of interest includes visually displaying the region of interest to <u>allow the operator to</u> detect

3   the onset of <u>the</u> arterial phase of contrast enhancement in the artery.

1   39. **(Currently Amended)** The method of claim 31 wherein monitoring the region

2   of interest includes visually displaying the region of interest to <u>allow the operator to</u> detect

3   the arrival of the administered magnetic resonance contrast agent in the artery.

1   40. **(NEW)** The system of claim 31 wherein monitoring the region of interest

2   includes visually displaying a series of images as a temporal pattern of the concentration of

3   the contrast agent in the region of interest to allow the operator to detect the arrival of the

4   administered magnetic resonance contrast agent in the artery.

Page 6

1   41. **(NEW)** The system of claim 31 wherein monitoring the region of interest

2   includes visually displaying a series of images as a temporal pattern of the concentration of

3   the contrast agent in the region of interest to allow the operator to detect the onset of the

4   arterial phase of contrast enhancement in the artery.

1   42. **(NEW)** A method of imaging an artery of a human patient using magnetic

2   resonance imaging and an administered magnetic resonance contrast agent, the method

3   comprising:

4   applying a series of magnetic resonance pulses to a region of interest in the human

5   patient;

6   measuring a response to the series of magnetic resonance pulses;

7   generating a series of images using the response to the series of magnetic

8   resonance pulses;

9   visually displaying the series of images as a temporal pattern of the concentration of

10   the contrast agent in the region of interest to allow an operator to (i) detect the arrival of the

11   administered magnetic resonance contrast agent in the artery of the human patient, or (ii)

12   detect the onset of the arterial phase of contrast enhancement in the artery of the human

13   patient; and

14   collecting image data of a magnetic resonance imaging sequence, after the operator

15   observes the arrival of the contrast agent in the region of interest and in response to an

16   input from the operator, wherein the image data which is representative of the central

17   portion of k-space is collected near the beginning of the imaging sequence and while the

18   concentration of contrast agent in the artery is substantially greater than a concentration of

19   contrast agent in veins adjacent to the artery and wherein the image data which is

Page 7

20   representative of a peripheral portion of k-space is collected after collecting the central

21   portion of k-space.

1   43.   (NEW)   The method of claim 42 wherein the imaging sequence is a 3D

2   imaging sequence.

1   44.   (NEW)   The method of claim 43 further including instructing the human patient

2   to hold his/her breath before collecting image data which is representative of the central

3   portion of k-space.